AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICE CURRENT.

" *O fortunatos nimium sua si bona norint*
" *Agricolas.*" . . . . . VIRG.

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AGRICULTURE.

Brief observations, on some of the diseases of INDIGESTION, and the deleterious effects of the COFFEE OF MOCHA and the W. INDIES: with considerations on the sanative virtues of RYE COFFEE—*and instructions for preparing it.*

BY CALVIN JONES, M. D.

RALEIGH, N. Carolina, 1821.

BRIEF OBSERVATIONS, &c.

Persons of weak constitution; those in the decline of life; women, particularly of sedentary habits, are in a peculiar manner subject to head ach, nausea, cholic, &c. Even men, whom nature intended to be robust and healthy are often afflicted with these complaints. Consumptions and Dropsies of the breast are diseases of common occurrence. All these, in Carolina, are of comparatively recent date, and belong almost exclusively to the present age. This, I am warranted in asserting, from the testimony of all whom age and experience have qualified to pronounce, and I can myself bear witness to their increasing frequency since I have been an observer.

These diseases depend, for the most part, upon a derangement of the digestive functions,—and this again depends principally, and so far as it is my present purpose to pursue the enquiry, upon the quality, quantity and mixture of the food, drinks and condiments taken into the stomach. There are other and inferior causes that would belong to an elaborate and systematic essay, embracing more comprehensive views than belongs to a brief tract intended for popular use.

The first settlers of this country were remarkable for their industrious and frugal habits.—Spirituous liquors were drank only occasionally, when the distant store was visited, militia musters attended, or on some remarkable occasion. If excess was sometimes indulged in, abstinence and the labours of the field, or the chase soon wore off the effects, and the system had time to regain its powers and establish its balance before another debauch followed. Their diet was plain, substantial and simple. The use of that indigestible and poisonous drug, coffee, was unknown. The consequence of this mode of living was, an almost, total exemption from the diseases I have named. But as wealth flowed in, luxury and disease came in its train. The decanter dispensed its bane from every side-board, and coffee and other luxuries at every table diffused the seeds of disease under the guise of sustaining life.

Head-ach, the firs disease I have named, and the most important on the list for severity of suffering and frequency of occurrence, is not always symptomatic of an undue performance of the digestive functions Sometimes it is produced by an excessive degree of excitement in the system—and again, it is, though rarely, a disease of too little excitement, and denominated, as many diseases are, because not understood, *nervous.* Sometimes a pain in the head is strictly a rheumatism, which may be suspected by its alternating with pain in the bowels, the large joints, &c. In this there is a sensation of coldness in the head, and one remedy among others, is to throw away a superfluous cap or two, cut off the hair and affuse the head and whole body with basins of cold water in the morning and of hot water at night; to administer, guaic, laud, &c. &c. On another occasion I shall treat at large of rheumatism from observations I have been twenty years recording, and shall, I trust, detect it in the guise of other diseases, where it has concealed itself by its equivocal or deceptive character. To this detection in one of its forms I attach much importance, as it leads directly to the only certain method of cure. A head-ach is also sympathetic with the sockets of teeth that have heretofore been the seat of pain. Of all these varieties I have nothing more to say in this place, and there are few in number, compared with those connected with a diseased stomach.

Of the diseases of indigestion to be briefly treated of here, their exciting causes are—

A. Spirituous Liquors.
B. Indigestible Aliment.
Indigestible from
a. Its intrinsic nature.
b. Its incongruous mixture, &
c. Its oppressive quantity.

I would speak of the depressing affections of the mind, of want of exercise, of retroducent eruptions, and also of the injurious effects of tobacco, in its directly debilitating influence upon the system; and its occasioning a waste of saliva, a necessary solvent of food, were it not for the consideration that the brief view I am taking compels me to pass along without noticing the subordinate parts of the subject.

A. *Of Spirituous Liquors.*

The use of ardent spirits can scarcely be indulged in without the certainty of injury The system in health requires only nutriment and the addition of a stimulant so powerful as ardent spirits is foreign to its wants, and of course must be hurtful to its effects. To good health no addition can be made, and of consequence, any change produced must be a recession towards disease. A *sober* dram and grog drinker is not easily persuaded that he is doing a permanent injury to his constitution, because he confides in the safety of moderation, but he is certainly laying the foundations of the most formidable diseases, and does more injury to his system than the occasional drunkard who has long intervals of abstinence.

I have often witnessed, and so has every practitioner, that when the patient was an habitual drunkard, his disease whatever it was, would run its course uninfluenced by medical treatment: If a sober drinker, he was not readily susceptible to the impressions of medicines; but if a water drinker his system could be controlled at will. and when the oppression of disease was removed, would, like the bent but unbroken spring, at once recover its pristine elasticity and force. A drammer, however moderate he may be, will commonly perceive that he has impaired the functions of his stomach, by his want of relish for simple food, and by his incapacity to digest it.

A. *Indigestible Aliment.*

a. *from its intrinsic nature.*

As the plan of this essay will confine my remarks within very narrow limits, I shall notice by name only the single article of coffee. But this is enough—the indigestions, produced by this foreign poison, and the affections depending thereon, make a distinguished figure in the modern catalogue of disease. I could, if my limits would permit, and the occasion required, give hundreds of instances of persons who have impaired the functions of the stomach and injured their general health by the use of coffee: a few must suffice.

Mrs.——— had long been subject to daily cholic and frequent head-ach, for which she was in the habit of taking cairminiatives and evacuants By discontinuing the use of coffee and adhering to a plan of simple, soluble aliment, she gradually regained good health.

Mrs.——— had acid eructations, head-ach-constipation, cold hands and feet, low spirits and a dry cough. Abandoning the use of coffee, commenced the cure, which was gradually perfected by simple diet, rye coffee and the pills to be mentioned hereafter. The head, before this prescription, had been shaved and blistered for the injuries coffee had done to the stomach.

Mrs.——— had head-ach and cholic. She at length observed that coffee would not remain on the stomach, but was eructed, for hours after it had been taken. Exactly the same course as pursued in the preceding case had precisely the same result

Miss ——— for two years suffered so much from continued nausea and head-ach, as to be unable to attend school with comfort, or pursue her studies with advantage. Substituting tea and milk for coffee, and confining herself to aliment not disposed to ascescency, her health became good and her mind recovered its wonted activity and force.

Mr.———who had been an intemperate coffee drinker, had a sense of fullness in the stomach, heat in the breast, and a slight difficulty of breathing A dropsy of the chest at length supervened, of which he was cured with great difficulty.

Mr.——— at the age of 60 found that coffee passed his bowels unchanged. The powers of the stomach, he discovered too late, had been quite destroyed by it.

Mrs.——— who had used rye coffee for some weeks and rather reluctantly too, because she thought it too domestic and too cheap for a genteel table, and who was unwilling to attribute her improved health to means apparently so feeble, and having in them so little of the parade of doctorship, had her prejudices suddenly removed by a little incident: a friend came to visit her, whom she could not treat with any thing that was not costly and foreign, and by participating with her guest in the use of coffee experienced such a degree of heart-burn, oppression at stomach, and head-ach, that she frankly avowed her determination not to drink coffee again unless rye was not attainable.

By pursuing the effects of the impaired powers of the digestive organs to their remote consequences, a great triumph was recently obtained over a disease that has been a reproach to medical science. Dr. Gillett of Raleigh traced diabetes in one very remarkable case to the imperfect exercise of the functions of the chylopoietic viscera, and by a happy application of principles to his very successful investigations, inhibiting the use of coffee, enjoying the use of simple aliment and producing an equality of tonic power between the chylopoietic and sanguiferous systems by abstracting the immediate excitant of the latter, health was restored where life had been nearly despaired of.*

I began my observations upon dyspeptic diseases, produced by the use of coffee, in experience on my own person, five and twenty years ago. At that time I lived and practiced medicine in an unhealthy district upon the Neuse. One autumn, when first able to leave my room, after many weeks confinement to it by fevers, I paid a visit to a family in the neighbourhood, and at the breakfast table declined a supposed cup of coffee offered by the lady of the house, in consequence of its disagreement with my stomach since my illness. On her replying that it was not real coffee, but a counterfeit prepared from rye, having at that time, none of the genuine, I retracted my refusal, made trial of it, and found it tolerable to the palate, and very grateful to the stomach, and I drank it for several days with increased pleasure and continued advantage. On my return home I again attempted the use of coffee but

* It is understood Dr. G. will favour the world, through the Medical Repository, with the particulars of a case alike important to humanity, and honorable to his professional skill.

found it as before indigestible. My experience ever since has been the same: If in good health, and engaged in active pursuits, the inherent energy of my stomach has enabled me to resist the deleterious effects of coffee, but if weakened by disease or confinement it was always oppressive, though it might sometimes fail to produce positive disease. Frequently, when I have thought myself oppressed by the quantity of food taken, I have diminished the solid part of my meals without perceptible advantage; but on suspending the use of coffee, the real offender would be manifest.

But it is said that coffee is a powerful temporary remedy in some cases of head-ach! I have little to say to it as a medicine, nor have I to Hellebore or Opium. I only object to it and them as daily food. An active remedy in disease cannot be innocent food in health. But I more than doubt its possessing medicinal virtues. If it relieves head-ach it never cures it, and no more proves that it was not the cause of the complaint, than it is proved that whiskey does not occasion tremors in the hands of a drunkard, because a morning dram will afford him relief. Dr ———, a very observing physician, once fell under the common mistake in this respect, as he lately informed me. He employed coffee, liberally, to cure a head-ache, for an entire summer before he discovered that his disease was caused by the very remedy he afterwards employed so largely to cure it. He now uses rye with pleasure and advantage, and cannot drink coffee without paying dearly for the poor indulgence.

b. *Of food, indigestible from its incongruous mixture.*

There is a peculiar adaption of aliments to each other, and of those to the taste and stomach, that are essential to good health: Their harmony ought to be consulted. But this is too seldom done: The refinements of luxury lead us every day further from the wholesome simplicity of nature; new tastes are artificially created and our meals are a farrago of discordant materials, that call for digestive powers too multifarious to reside in the same organ and be exercised at once. A physician would justly be exposed to obloquy if in the admixture or administration of his medicines, he should bring articles together that would render each other inert or deleterious. But the cook and the epicure bring no science nor even common sense into a service of daily requirement and great importance; and the quackery of their culinary compounds and preparations are as mischievous as any that can be made in medicine; and more; for the slow devolopement of their effects begets a fatal confidence in their innocency, until it is too late to retrieve the error. What can a reasonable being, who will exercise his faculties expect from a meal composed of bacon, beef, fish, fowl, cabbage, peas, pickles, puddings, pies, cheese, milk, eggs, nuts, fruit and fifty other articles, besides wine, beer and spirits? and yet we see such every day, and too often witness their effects. An Ostrich in the New York Menagerie, once died of an indigestion from swallowing a bandanno handkerchief, and a parcel of buttons. No wonder that men have indigestions when they emulate an animal famed for the powers of its stomach.

c. *Of Food injurious by its quantity.*

The heterogenous meal is not injurious by its want of harmony alone. The provocatives, which the succession of courses and articles offer to the appetite, make it as oppressive by its quantity as by its discordant qualities. A moderate meal imparts vigour, but a full one demands strength to sustain it. The example of the Arabs, of the American Indians, and of the poor in some of the countries of Europe, show how little nourishment is necessary to good health, and the vigorous exercise of all the faculties of body and mind. I have, from choice, and also from necessity, been subjected to the proof in my own person, that the best of health may be enjoyed, with an unusual degree of activity of body and mind, on a diet that I deemed at the time, and which all would pronounce exceedingly slender. Proofs are not necessary to a fact, of which the probability, if not the certainty will appear evident to every one who has had frequent experience of full meals—a qualification to judge, extending, I believe, to every civilized individual of America.

Having treated of the *causes*, I will now proceed to the consideration of the

REMEDIAL PROCESS.

The curative means proposed will not be more various and ample than the view which has been taken of the causes—they will be made to correspond with each other. I shall therefore, without immediate reference to the particular indications to be answered, treat—

I. Of water drinking and of abstinence from spirituous liquors.
II. Of simplicity in diet and uniformity of Regimen.
III. Of food, of easy solution and harmonizing with the stomach, and
IV. Of Medicines.

First—*Of water drinking and of abstinence from the use of spirituous liquors*—Though experience has been abundant, yet the effects of spirituous liquors upon the system is not generally understood: but from much and attentive observation, particularly in travel, I am abundantly satisfied that cold, wet, heat and fatigue are better endured, and their common effects more completely resisted without than with the use of spirits. I could produce a hundred instances in proof, but I hope it will be believed without the details, for which, I have neither time nor room, that my observations have been correct and that my inferences are just. These facts would be in point to prove that the powers of the stomach cannot be invigorated, but must be weakened, by the use of ardent spirits. It is understood that I am speaking of their common use in health, and not of their medicinal use in disease. To relieve the stomach from the oppression of a full meal, spirits, wine and porter are commonly resorted to, but they only serve to aggravate the complaint and add to the oppression. Pure water is the best and most efficient remedy, as I have many times experienced. A tumbler or two taken cold upon the stomach will in such circumstances show how art is often misapplied and how reasoning about the invigorating effects of stimulants is liable to mislead. Dr. Manley of New York, has lately related in the Medical Repository an interesting case of the alarming effects produced in a patient recovering from Typhus Fever by taking indigestible food, which, after resisting a variety of stimulant medicines, yielded promptly to the liberal administration of ice. The increased appetite and improved powers of digestion, always witnessed at *all* the watering places, may be attributed to the lessened use of spirituous liquors, and the greatly enlarged use of water, without attaching much merit to its various impregnations. Dr. Mosely says, the ladies of Jamaica have excellent appetites and are great eaters, because they are great water drinkers. The same observation may be made every where else as well as at Jamaica, going to shew that water is the best and only proper menstruum for food.

Strong drink is sometimes taken to remove fatigue and exhilirate the spirits; but the good effect is uncertain and transitory and the evil permanent and sure. I have travelled much in savage haunts and among civilized abodes, and have tried all the resources of art commonly employed to recruit exhausted nature, and can say that sleep is more effectual than any potation and tea more efficacious than strong drink. Tea should be taken, not in the morning when the system is in the freshness of its vigour, nor at night when sleep is required, but in the middle of the day when nature is already fatigued and has yet much to undergo. A decoction of tea or the leaves eaten dry, I have always found, under such circumstances, invigorating and refreshing. I will add, that I know from much experience that heat and fatigue are best borne when the stomach contains but little food and when that little is light and bland.

II. *Of simplicity in diet and uniformity in regimen.*—It requires no easy credulity, nor yet a disposition to undervalue the acquisitions of science to believe that old women often cure diseases that have baffled the skill of physicians. Dr. Rush seemed to take a peculiar pleasure in mentioning this fact, which he attributed to their long and patient adherence to the same simple prescriptions. Every observing man has witnessed, if not their efficacy, at least the success that has attended their excellent negative merit, of doing no harm.

I was lately amusing and perhaps instructing myself in turning over the leaves of some Italian authors who flourished three centuries ago, and who laid the utmost stress upon this decoction of herbs and that particular article of diet. One could not help smiling at their ignorance, and yet I have no doubt their prescriptions were often very successful, not that there was any particular merit in this or that article of food or medicine, or that any good reason could be given why one was preferred and the other rejected; But they were simple; they were innocent; they did not perplex the powers of digestion and gave the system an opportunity to recover itself.

More than twenty years ago the late Gov. Spaight in conversation informed me of his own case—that he had been afflicted with ulcers which had baffled the skill of Rush, Osborn, and others, and resisted the sanitive effects of the air of Bermuda. At length an old woman in Philadelphia prescribed a decoction of barley and a milk diet, which effected a cure. On mentioning this to Dr. Rush, he claimed it as his own forgotten discovery, and produced an old newspaper in which it had been promulgated a dozen years before. Though I have no doubt of the verity of the fact, and believe more in the efficacy of the remedy than I do in another Sybeline prescription of the Doctors; common salt as remedy for hemorrhage of the lungs, (contradicted by all my experience,) yet I more than distrust the correctness of any theory of the mode of cure in this case which gives the credit to medicine, strictly so called, rather than to regimen.

The preceding facts are stated and remarks made merely to confirm my own experience and justify my own opinions—I could, if it were necessary, multiply proofs of the importance of a persevering adherence to a plan of simple diet and medicine in various diseases, and particularly in those of that primary and noble organ the stomach. It is important in indigestions to go back to the first simple food of nature.—Milk often disagrees with the stomach that has been estranged from its use and whose faculties have been perverted, but Dr. Rush's instructions are "when a patient complains that he cannot bear milk, prescribe a milk diet." The complaint is proof of a state of stomach that nothing but the simplest diet will cure. In extreme cases, milk will some times require the preparation of boiling, the addition of salt, &c. or the contemporaneous use of soda. For the most part stirring well boiled hominy, rice or mush into milk to prevent the forming of any considerable mass of coagulum, is all that will be required in cases where acidity the most abounds. Once a day, at a stated period, flesh might be used sparingly with bread and some one vegetable, if found to agree with the stomach, but at a marked distance from any other meal.—The periods for taking food and medicine, and for evacuations, exercise and sleep should be regular and stated.

III. *Of Food of easy solution and harmonizing with the stomach.*—As the narrow limits of my plan forbids my going much into detail I shall, under this head, only specify a single article for a breakfast beverage as a substitute for that indigestible berry, Coffee. I say a substitute, for though I condemn Coffee and have all possible favor for milk as an article of diet, yet I would not banish hot drinks from our breakfast tables, but would rather advance a step and extend them to soldiers and slaves, believing they would add to their comforts, conduce to their better health, and lessen their appetite and imaginary necessity for strong drink. I therefore propose a substitute.

I will not undertake to say how much is positively due to a beverage prepared from Rye in giving and preserving health beyond the merit of excluding that unwholesome article Coffee from our tables, but I

know something is. Rye is an excellent article of food and rye mush has long been celebrated as a diet for consumptives. A gentleman of my acquaintance thinks that Rye Coffee, drank as his constant beverage at all times of the day for many months, cured him of a consumption From considerable experience, I am so well satisfied that it is a mild, inoffensive and nutritious drink, perfectly soluble in the stomach, and exceedingly well adapted by all its qualities to supply the place of Coffee at our tables, that I have no hesitation in recommending it in the strongest terms to all who would preserve their health, or having lost, would regain it.

To prepare Rye for use it should first be scalded and washed, then boiled fifteen minutes, afterwards remain in the water until somewhat swollen, and lastly thoroughly dried in the open air. The next process is to roast or parch it carefully without burning. When ground, about two gills is by the admixture of cold water to be formed into a paste. Three quarts of boiling water is then to be added and the pot which contains it to be placed on coals and kept boiling for a quarter or half an hour. It is improved by slow and long boiling and by a leisurely depuration afterwards. When sufficiently boiled, is to be removed from the fire and a quantity of cold water, equal to that which has been evaporated, is to be suddenly poured into the pot and the whole slightly stirred up with a spoon. A little is now twice to be poured off and returned to the pot. After remaining 8 or 10 minutes or longer, to give the grounds time to subside, it is to be poured off into another pot until the sediment is disturbed. The grounds on a little agitation are rendered so buoyant that this decanting is necessary to preserve the liquor free from turbidness. Thus prepared, it is of a fine amber colour and with due portion of sugar and cream has a rich balsamic taste and a very grateful flavour. Some who employ it mix the Rye with one fourth the quantity of Coffee to give it the peculiar flavor of that deliterious bean—but the rye flavor is superior to that of the coffee when custom shall have rendered it familiar; and to retain the fourth of the evil, for that consideration, is making very bad terms with an exposed and subjugated foe. Besides, the articles are not suited to each other; they do not assimilate; they are wanting in natural affinity; the decoction from the mixture will not depurate readily, and the conjoined flavor is inferior to that of either taken singly.

Rye is a delicate grain and should be preserved carefully and treated with scrupulous exactness or it will disappoint the expectations I am attempting to excite. It should be kept dry and well secured from mice and insects, and be occasionally stirred and aired or it will acquire an unpleasant flavor. After scalding and washing, if not dried speedily and thoroughly, by being thinly spread, and having a proper exposure, it will become musty; and even after being roasted, with great caution, if the weather is damp* and hot it will sustain injury.

As an example to encourage the timid in the use of rye as well also as to bring into notice another beverage of excellent qualities, I will mention the Youpon, which is in universal use on the banks and along the sounds of North Carolina. This has a very nauseous taste and smell to those unaccustomed to it, but when used for a time, the fondness for it is greater than that for tea or coffee, almost equalling the passion which many acquire for ardent spirits and tobacco. My own experience of it may serve to fortify the principles and strengthen the resolution of some. A contempt which I have always felt for the effeminacy of those who would not live as they found others living among whom they travelled, led me many years ago to make a fortnight's sacrifice of taste to this sentiment in regard to Youpon, and I have since been amply repaid for the temporary sufference. During the late war, when it became my duty as commanding general of the militia, to be much upon the sea board, I lived well upon Youpon, while other officers, who chose to retain their prejudices, fared many times but indifferently. No beverage is now more grateful to my taste than Youpon, and when I first commenced its use, few things could have been more offensive.

The utter prohibition of Coffee from our tables is also urged by the strongest considerations of patriotic regard. The average quantity annually consumed in the United States from 1803 to 1812, was more than sixteen millions of pounds weight, and the quantity has greatly increased since. In the most disastrous year of the late war, there was consumed upwards of twelve millions of pounds, much of it our enemy's product, at a cost to the consumers of nearly six millions of dollars.

The difference between using an article of domestic growth at one cent a pound, and another of foreign product at thirty five, is not the only economical consideration I would impress. By the use of the former a saving is made of one half the quantity of sugar.

Having disposed of the only article I intended to specify, it becomes necessary, in order to complete this head of the subject, to speak of the preparation of food. Here I can no more go into detail than I could upon the specific articles. I shall only contend that good cookery is indispensible to good health. We have many valuable scientific books to guide us in the preparation of medicine, but not one for food. Our books of cookery are but the panders of disease, intended only to provoke the appal'd appetites of epicures. We want advice how to obtain the most nutriment, to preserve it in the greatest admissible simplicity, to render it soluble, to adapt the different ingredients to each other and to the stomach, and to conduct the whole process with a proper regard to economy. That man who would bring science and observation to such a task, and give the world a book, would do it more service than by discovering the longitude. Doctors Rush and Mitchell, and President Cooper, have each pointed to the subject, but it was from the top of Pisgah. We want minute details. In this place I can only contend in two words for Aliment, that is simple and soluble.

IV. *Of Medicines.*—Those diseases, caused in chief by errors of diet, will, for the most part, be cured by the simple operations of nature, if these errors are corrected. But removing the cause is not the cure, and the advancement of the system towards health will generally, in point of time, bear some proportion to its previous recession from it. Some medicines may be absolutely necessary. A torpor of the viscera, consequent flatus, acidity and costiveness may all require them, and the urgency of any particular dyspeptic symptoms may demand energetic treatment specially directed to it. But for general purposes, answering to them all, and adapted to nineteen cases in twenty that occur, no other medicine will be required than the *Tempil's*, of which the follwoing is the composition:

Powdered rhubarb, three parts, super carbonate of soda, two parts; asafoetida, aloes and castile soap, each one part—Honey sufficient to form the mass.

Of these, from two to six pills of the ordinary size, in divided doses, are to be taken daily, as the state of the bowels may require.

I say nothing of the benefits produced by the warmth and irritation of flannel wore next the skin, nor of the great importance of producing and keeping up an eruption upon the back in many cases of Dyspepsy, because I have omitted to speak of repelled eruptions and some other occasional causes of the disease

This is what I propose at present to offer on the subject of the diseases of indigestion. I know that the plan of curing them in the simple way I have prescribed, has little in it to attract the confidence of the vulgar, or gratify the vanity of the learned. I have said nothing of Herculean remedies as they are termed, and patients who are averse to the trouble of regulating their diet and regimen, as well as those physicians who are averse to the trouble of thinkng, love to repose upon a medicine which has healing attributes, numerous and positive as those which Dr. Chapman with more liberality than discrimination, has applied to the articles of his Materia Medica. It alieates responsibility and care, but leaves—hope. Instead of recommending them I must impress upon my readers a caution of their danger. I frankly acknowledge all that medicine owes to Chymistry. It has greatly enlarged its powers and subjected diseases to its control that bade defiance to galenicals. But it is doing too much. Every where its janizaries are employed, and the evils they produce by their violence almost counterbalances the benefits they confer by their power.

The havoc annually produced by violent medicines in the bowel diseases of infants should awaken reflection; Nor is the vigour of manhood proof against their overwhelming force. I have seen in autumnal fevers, (or bilious fevers if physicians please to make them such,) Jalap and Calomel given in large and repeated doses, to bring away bile which did not yet appear, but which the sagacious physician gave assurances would appear; when at length, by these powerful excitants, the whole force of the disease, very little lessened by insufficient bloodletting, would be diverted upon the chylopoietic viscera; then indeed the bile would shew itself in great abundance, and then the physician would deem himself called to a new administration of Jalap and Calomel to carry it off, and which, in the end, would commonly carry off the patient also. I have been many times shocked to witness a perseverance in these and similar errors, by very good physicians, without their being apparently awake to the consequences: when, if instead of employing this Herculean force, the inflamed sanguiferous system had been unloaded of a weight disproportioned to its powers, and broken doses of neutral salts to promote gentle evacuations, had been given, the cure would have been too easy and speedy to have gained, in *so mild a disease*, any reputation to the prescriber.

Doctor Rush proposed to humble the pride of science by giving a prescription learned from an old woman. In furtherance of the views I am advancing, I will offer one obtained from a negro slave. Five and twenty years ago, I witnessed an old Mandingo giving charred corn-cobs, with good success, to the negro children of the estate to which he belonged for a "watery gripes," a practice which he told me he had learned in Africa, and it gave me great pleasure to find afterwards, that Mungo Park, in his travels there, had witnessed the same practice.

Again—Medicines should not be nauseous; and with this remark I will dismiss the subject, *that the stomach is an organ whose importance to life and health is attested by the safeguard of its delicacy, and which cannot be tresspassed against without the infliction of injury.*

DEDICATION.

The foregoing hasty and imperfect essay, I beg leave respectively to inscribe to the two men of America, most distinguished for genius, learning, and public spirit, *Dewit Clinton* and *Samuel L. Mitchell*, of New-York, and to the most intelligent and judicious physician of Carolina, *John Beckwith*, of Salisbury, and through them I dedicate it to the interests of general benevolence.

* The rains for some time past imposed on my cook the necessity of trying another method of drying the rye, different from the above, and which proved to be equally good. It is to dry it in the vessel in which it is roasted, making the drying and roasting a continuation of the same process.

ROTATION OF CROPS,

By Henry S. Turner—in answer to the Objections of Mr. Dabney Minor.

FOR THE AMERICAN FARMER.

Wheatland, August 22d, 1821.

Mr. Skinner—It would afford me very sincere pleasure to comply with Mr. Minor's desire, that I should communicate "some further details on the Rotation of Crops which I have adopted," and pursued for many years on my farm; but it does not occur to me, that I can add any thing of importance to the information heretofore given on the subject in the pages of the "American Farmer."

I will, however, ask leave to offer a few remarks, in relation to the "objections" that have been suggested by Mr. Minor, to the system which I have pursued.—

The Rotation is wheat, corn, fallow, wheat, clover, clover. The objections are—1st—"The naked situation in which the field is left in fallow, after corn, subject to the washing rains of winter and spring, and exposed while in this naked state, too much to the influence of the sun, at the commencement of summer."

2ndly. "The increase of team, which it will be necessary to keep on the farm to accomplish the fallowing, for wheat of two fields instead of one."

Experience has not verified the first of these objections, to the extent apprehended. It is obvious however, that the proper selection of an established course of crops, and the results of the various systems, depend very much upon the peculiarity of the soil, mode of culture, &c.

My method of cultivating corn, is as follows: As early in the spring as circumstances will admit, the ground is broken up to the depth of seven or eight inches and well harrowed.—The corn is planted, about the first of May; when about six or eight inches high, it is harrowed with a large heavy harrow, passed directly over it, after which it is thinned.—Early in June it is ploughed with the shovel-plough; and, immediately preceding harvest, it receives with the cultivator, the last dressing—which is very superficial. Perhaps Ballthrop's double-shovel patent plough, is better adapted to the cultivation of corn, and the putting in of small grain, than any other instrument, and might be advantageously used to give this last working to the corn crop. The whole process being thus completed by the latter part of June, the surface of the ground becomes completely covered with crab-grass, bottle-brush and a variety of weeds, by the middle of August, which added to the circumstance that our lands are not much liable to wash, obviates considerably that branch of the objection—Its exposure to the influence of the sun, at the commencement of summer, is an evil of greater force than the foregoing; but, I apprehend it is not one of sufficient magnitude to induce an abandonment of the system, unless a better can be shewn. Pretty early in the summer, a vigorous soil will throw out a great variety of plants to shield its surface from the sun's rays; and I have always found mine, when the season for fallowing arrives, thickly clothed with crab-grass, bottle-brush, and hog and carrot weeds, together with other indigenous plants, to the height, some of them, of five feet or upwards. These turned in to the depth of seven or eight inches, tend considerably to the melioration of the soil, leave it in a light state to favour the expansion of the roots of the wheat in quest of aliment; and, perhaps, counterbalance the injury received from temporary and partial exposure.

As to the 2d objection, I have not found it necessary for the purpose therein specified, to incur an increase of team. If the teams attached to the farm, were barely sufficient to till the corn field, and prepare one fallow field, they would be inadequate to perform various other indispensable services: and at no season of the year, in fact, are any of my teams idle, except during harvest.—Immediately after seeding, (say the 10th of October) one team of six horses or mules, is engaged in the transportation of flour to Market; and, in bringing back loads of plaster, salt, fish, groceries and whatever else the wants of my family or farm may comprehend: and the remaining teams, find full and constant employment in the innumerable occupations at home, hauling in corn, threshing and delivering wheat into the mill, hauling rails, manure, and fire wood; supplying the racks with provender, &c. &c. &c.

Whether the foregoing statement be a satisfactory refutation of the objections, or not, I submit to the better judgment of Mr. Minor.--It has been elicited by the deference I feel for that gentleman, and the interest which I take in the cause of agriculture:—if further developements be desired, I must refer to my communications in the "American Farmer"—at the same time, I am really apprehensive that nothing contained either in this or any former sketch, is calculated to interest or to instruct.

Mr. Minor says "that the rotation which he is in pursuit of, is the one, that is best adapted to a soil, situation, &c. where wheat is the staple crop, where tobacco is excluded, and where it is no object to grow more corn, than is sufficient for the farm." This is essentially mine—I have pursued it for twelve years, and more successfully than any other has been, with which I am acquainted.

One innovation, only I contemplate, and shall commence this fall: it is to seed my corn field, in addition to two fallow-fields, one half in rye in the fall; the other half in oats, in the spring: then instead of having three fields, or one moiety of my arable land in grain annually, I shall have four fields, or two thirds under tillage, and the course will be wheat, corn, rye and oats, wheat, clover, clover. This may be considered a severe test of the soil, but I believe that mine will sustain it and improve. The only objection that presents itself to my mind, is the probable necessity of hiring aid in harvest; but should it be found indispensable, the augmented profits will administer some consolation.

Very respectfully,
Your most obedient humble servant,
HENRY S. TURNER.

ON PEAS—PEA VINES—AND FATTENING HOGS.—By Josiah D. Gaillard.

To the Agricultural Society of Pendleton, S. Carolina

August 13, 1817.

There are perhaps, few parts of the United States, where a strict observance of economy in husbandry is more loudly called for, than in this district; and I verily believe we practice as little as any civilized people in the world.

Our range, which some years ago, was as good as could be wished for, is now almost completely exhausted. It is at least so far spent, that during the spring and summer months, all that our cattle can glean from morning to night, is barely sufficient to make the most thrifty of them tolerable beef by fall; and that not without the assistance of bushes and weeds of various kinds; and the mast of the different kinds of oak, which formerly seldom failed to be abundant, is now seldom sufficient for the support of our hogs, half of the winter, and although this want of range is so sensibly felt, we are (strange to tell)still depending altogether on crops of corn and small grain, badly managed on exhausted lands, to supply every thing about us with food.

It has been recommended iu two excellent communications read before our Society, (as a cheap and easy mode of obtaining winter food for cattle, sheep, and horses) to cultivate the field pea, and I did hope the practice would have been generally adopted; but it appears that some further inducement is still wanting, it is therefore, I am induced to add my experience in the use of that valuable article.

In the fall of 1813, I purchased three acres of peas, as they stood in a neighbours field. After two severe white frosts had fallen on them, I picked off all the ripe peas and such green ones as where full; the vines were then pulled up, and after two days, were caught in a rain, which lasted the whole day. As soon as the sun had dried the upper side. they were turned, and three days after they were hauled up; the produce was one good wagon load and an half; they fed two cows and calves six weeks, once a day, and were eaten heartily, and much preferred to corn husks or wheat straw, and while they were fed on them their milk was much increased. The peas fed two horses, twice a day, for four weeks, during which time they got in fine order. These peas had been planted some time in June, among corn in the step, and I think ploughed and hoed once.

On the 6th of June 1814, I planted peas in an eight acre field of corn, immediately after the second ploughing; they were put in the step with a hoe, and about twelve grains put in a hole; they were worked once with the plough and hoe; about the middle of September the vines were pulled up, and after laying four days, turned; on the seventh day all the dry peas were picked off, and on the 8th, the vines were housed. Two horses were fed on them twice a day, (and once in the day with sheaf oats,) for five weeks, in which time they got in excellent order, and the balance fed two cows and yearlings, and four sheep, for three months. The two cows during this time, furnished generally about sixteen quarts of milk per day, and in the spring, when they were turned in the woods, one cow, and yearling were good beef, and the others in good order. The corn among which these vines grew, made something short of ten bushels to the acre.

On the 16th and 17th of the same month, I planted peas after the same manner, in seven acres of corn, these were ploughed and hoed once, early in November, all the ripe peas were picked from six acres of the best, the worst acre and all the green ones were left. Thirteen hogs, four head of cattle, two horses and four sheep were turned in the field, and they did not eat all the peas in seven days. After feeding two horses on the peas that were housed from the six acres, for two months, ten bushels were threshed out for seed and other use; the whole bulk after they were housed, was estimated at thirty bushels. The corn among which they grew, was supposed to produce twenty bushels per acre.

On the 2d and 3d of June 1815, the eight acre field from which I cured vines in 1814 and four acres adjoining, of the same quality, was planted in peas, after the same manner, and got the same attendance. Between the 20th and 25th of September the dried peas were picked off, and the vines pulled up; on the fourth day they were thrown up in heaps about five feet high; on the 7th day were opened and on the 8th hauled in. These vines fed two horses, twice a day, for two months, and the balance fed four head of cattle and four of sheep, four months, once a day.

On the 12th 13th, and 15th of June, 1815, I planted peas among eight acres of corn, after the second ploughing, (these were planted in double rows, that is two of peas for one of corn;) they were ploughed and hoed once, early in October; they were seen by a great pea planter from the low country, and pronounced to be very fine; early in November, they were picked over once, and the bulk judged by the same gentleman to contain at least forty bushels of shelled peas; twenty buhels were threshed out for seed and other use, and the balance fed two horses better than two months.

The corn among which these grew made sixteen bushels to the acre.

From the 20th to the 23d of May, 1816, I planted peas in ten acres of corn; these where dropt in the furrow next the corn on both sides, and covered with the plough; they received one hoeing and ploughing. From being planted so near the corn and in such quantity, each injured the other, and the drought in addition, rendered the peas on the poorer parts of the field unpromising. The vines from these parts were pulled up and fed to my horses and cattle in September, for the want of pasture for them; the other five acres being stronger land, and lying lower, were suffered to ripen; and although they were injured by deer, which frequented the field every night, for some weeks, and they were not picked until late in October, they produced twenty-five bushels of shelled peas; and from two acres of stiff old bottom planted on the 19th of June, after my old method, and ploughed and hoed once, I gathered ten bushels: these thirty-five bushels of peas, fed two horses two months, and left thirteen bushels for seed; the feed given the horses was a bushel basket three times a day, between the two. It was generally shook down and a little heaped, and upon threshing and measuring one of those feeds with my own hands, it was found to contain three quarts and one handfull; with this they had a common allowance of fodder. While my horses were so fed, they were daily employed in the plough or hauling new rails in the wagon, and they were fat. We know that the common feed for work horses is at least eight quarts of corn per day; nearly twice as much as mine get when fed on peas.

From the 25th to the 26th of May, inclusive, I planted peas in sixteen acres of corn, with the first ploughing, dropping them in the furrow next the corn. This corn was never worked again until it was tasseling; it was then ploughed and hoed, and laid by; on one row across the field, there was no peas planted, and on the adjoining row, they were planted on both sides; when the corn was dry, I took two gentleman in the field, and directed their attention to this experiment—they were of the opinion that the row which had no peas could scarcely be discerned to be any way inferior to those which had them but on one side, whilst that which had them on both sides was much inferior to both of the others.

Between the 20th and 25th of September, these vines were pulled up, and, after being three times wet, were at the expiration of fourteen days hauled up; the product was twenty loads of a two horse wagon, as much as two horses could well pull. I fed two horses on them four months; and three milch cows and their calves, and four sheep, four months, once per day; the horses had them three times a day, a bushel basket to each, at each feed, with two bundles of fodder; the cows' feed was one basket to each; the calves', one for the three, and the sheep one. While my horses were so fed they were in almost daily use, a good deal of the time hauling wood; and the stable was a shed entirely open on the north and east sides; notwithstanding this usage and exposure they fattened and remained so.

The three cows while fed on these vines, yielded four gallons of milk per day, and from the two which had young calves, one half of the milk only was taken; in a word, when my cows have been fed on pea vines, they have uniformly done well, and yielded an abundance of milk; and I have never had a cow stuck in mire, since I have been in this country. A neighbour of mine, two or three winters ago, fed four cows with young calves well, on turnips and short corn, and I fed two with a spring and yearling calf, on pea vines and kitchen slops; and I made within one pound as much butter in the week as he did; but I know we used more milk in our family than was used in his; and while the butter made from turnips has an unpleasant flavor, that made from pea vines will vie with any other (however made) for fineness, richness of color, and delicacy of flavor. And my horses have never been in better order, had a better skin, nor been healthier than when fed on peas or pea vines.

I have been asked, are they not very harsh food, cured so late? If what has been just said does not satisfactorily answer that question, I will ask the following in turn: If calves of three or four months old will eat them heartily, and fatten on them, can they be fairly considered harsh food? I have again been asked, are they not difficult to cure, so late in the season? They are tedious, but not *difficult*, because they are not easily spoiled. Do they not also lose all their leaves, when cured so late? They do lose nearly all; but this is made up over and over again, by the number of full and half grown peas they will have by remaining so late. Will not the full peas, in hauling up, all shell out? They will shell very little if handled with tolerable care.

It has been alleged by some, as an excuse for not planting them, that they are weak handed, and cannot save the vines; but this is mere imagination, for it is well known, that a common hand will not strip more than one acre of corn blades per day; and I have repeatedly had two acres of pea vines pulled up by a plough boy, and the vines, when cured, will weigh at least four times as much as the fodder, and will be as much more valuable.

I do not wish to be understood to recommend my manner of planting. It would, I am certain, be far more advantageous to plant them as soon as we have got our corn crop in, either in drill, on beds three feet apart, or cross the beds with a plough, three feet asunder, and drop from twelve to fifteen grains in a hill. The latter mode I would prefer on account of ploughing them both ways, which would entirely supersede the necessity of hoing, whereby a larger field might be attended.

The first president of our society, gives it as his opinion, that they would be an excellent preparatory crop for wheat. This has long been my opinion, (although I have not been yet able to make the experiment,) and many years experience establishes this opinion with me more firmly; and to place it almost beyond all doubt, it is the opinion of Judge Peters. Perhaps when they are intended as a preparatory crop for wheat, it would be best to sow them thick, in broad cast. There is no doubt of it in my mind, especially if the vines are turned in with a two horse plough, and the wheat immediately, or soon after, harrowed in, and rolled.

I should not have gone so much in detail upon the culture and use of peas, but I know that the prejudices against them are numerous and strong; and althongh I have already said so much, I must add one remark, which is this: while my neighbours' horses are eating corn, at least eight months in twelve, mine have never eaten it more than five; one year they eat corn three months, and this year but two, the balance of the year their food is peas, pea vines and oats.

Some farmers are in favour of curing the vine in August, and contend that they are the more juicy; but if they do contain less juice in September, I think it then becomes more saccharine, is therefore thicker, and I should suppose would lose less in curing; we know that the juices of a corn stock are much sweeter in September than in August.

As a further improvement in feeding of cattle, I would recommend that the shucks be well wet with brine, as they are stowed away in the fall. This was recommended to me last winter, and was done in this way: as many shucks were thrown in the house at a time, as would raise it six inches, after being well trod down; and as soon as they were sufficiently trod, the surface was well sprinkled with this brine; as many more were then put in, and the same process observed, until the whole were put away. In this way one bushel and a half of salt was applied to the shucks taken from these hundred bushels of corn, and the consequence was, my shucks were heartily eaten by my cattle, and until last winter, they never would eat them, as long as they could get pea vines. This is not all the advantage resulting from salting them; it was very evident that they were rendered much more nourishing, as the dry cattle which were fed on the shucks alone, were in nearly as good order as those which were fed on the vines. To do this properly, they should be made so wet as to heat and mould. The expense need not be counted at all, as cattle, while these shucks are given to them, will require no other salting.

As there is so little economy observed in fattening hogs in this part of the country, I beg leave to notice that also, and point out a better and cheaper mode. The common practice is to put them in a large pen, and throw the corn on the ground; in a wet season, they are soon up to their knees in mire, and not a dry spot to lay on. In this situation there must be much corn wasted, and they cannot possibly thrive but very slowly. My practice has been to make two square pens adjoining; they are both floored with rails, and one of them is so covered as to turn the rain, and is well littered with leaves or straw, and fresh litter added at least once a week. In the other pen a trough is placed, in which they are fed from twice to three times a day. One meal they are fed on peas, and the other two on

corn; it is sometimes boiled and well salted and at other times raw. This has been my practice for three winters; and my hogs have always fattened very fast, and eat much less than those fed in the uncomfortable manner above described.

Last winter, after killing off half of my fattening hogs, the others were fed altogether on fine corn meal, and although the weather had got much more severe, they fattened much faster than they had done before, and eat still less.

Last winter, when my fields were eat out, I commenced feeding my little stock of out hogs on corn; their allowance was six quarts; but when the weather became severe, they fell away fast on this allowance. I then laid the corn aside, and had four quarts of corn meal boiled every day, in ten gallons of water, until it boiled down to about eight; in this a half pint of salt was occasionally thrown while boiling; when done it was taken up in a large tub and given them the next day, and in one week from the day this practice was adopted, they looked much better, and from that time increased in flesh. When the spring opened, they were fed only three times a week, in the same manner, and in the month of May, reduced to twice a week, and by the middle of June it was discontinued. Had I persisted in giving them the six quarts of raw corn, I am satisfied more than half would not have seen the spring.

I have also adopted the practice of grinding all my horse corn into fine meal, and find that I save a third after paying the toll.

I am, dear sir,
With much respect,
Your obedient servant.
J. D. GAILLARD.

J. T. Lewis, Esq. *Corres. Sec'ry.*

THE RIGHT TIME TO FELL TIMBER—WITH A VIEW TO ITS DURABILITY.

Washington, Aug. 12, 1821.

Sir—

When we reflect upon the destruction that is every day progressing in our forests, and the consequences which, if it continues, will assuredly result to our country, from a scarcity of timber for the common purposes of life, we cannot but regret, most seriously, that improvidence, which, for the accomplishment of temporary purposes, by apparently the least troublesome means, will sacrifice not only our own interests, but the interests of posterity; whose reproaches we shall deserve, and receive as certainly as our ancestors receive them from us. We too shall the more deserve them, inasmuch as experience has already taught us the value of the trees which we destroy. For *them* there was some apology in the necessity which existed for preparing the soil for cultivation; but *we* can have none, because the barren wastes which now disfigure our country, will require the industry of ages to restore them to their original fertility—for creating these, our progenitors have also been censured, but with less cause. In the one case there was improvidence; but the other arose, first, from the demands of the mother country upon its colonies, which took all from, and returned nothing to the soil; and, secondly, from that happy state of our country, which enabled us to supply the wants of all Europe, while she was torn by intestine commotions.

They stand, therefore, as monuments to remind us of a subserviency, from which our forefathers liberated us, and of a prosperity, the fruits of which we are now enjoying in the numerous comforts of life, and blessings that surround us. Spare then the "groans of our forests," nor wrest from them more soil for culture, but repay to our worn-out fields, the debt which our ancestors have entailed on us—a debt of honor, because it is one, the benefits of which we have enjoyed; a debt of interest, because it is one, the payment of which will contribute to our future welfare.

In casting our eyes over the beautiful plain, now scattered with *settlements*, and selected as the site for an immense metropolis, for this vast empire, who does not blame the improvidence of those who laid the axe to the roots of those majestic oaks which were destined by nature to have been its ornaments? And who can refrain from sneering at the vain efforts, which we have made to ornament it by the substitution of those upstart exotics, which, by the still further impoverishment of our soil, prove, like most foreign importations, to be an injury instead of a benefit to us? Compare them to our venerable oaks, which are to them as the Pantheon to a Pavillion, or as Charlemagne to a Dandy!!

Could we now at will transplant, to some favorite spot, one of the majestic plants of our forests, what price would we not be willing to give for it?—five hundred, and even a thousand of dollars, would be, in the estimation of many, but a trifling sacrifice for the acquisition. And the care and attention which are bestowed on the comparatively miserable shrubs, which modern fashions have introduced, is proof of the estimation it would be now held in, were it attainable. Year after year we toil to obtain a poor substitute for that, which a little forethought might have secured to us.

But, it is not ornament alone that we should seek—*utility* should be our principal object.

No operation, in peace or war, can take place without the aid of wood. Every other material can be dispensed with, but wood alone can furnish the means of subsistence to man—from the rude savage, who, with his painted stick, digs the wild roots for his food, and assails with it his enemy; up to the civilized man, in the highest state of refinement, bearing luxuries on the oaks of the forests from every quarter of the world, and the thunder of his cannon, to chastise his foes, or to extend his conquest, it is really indispensable

The present appearance of our country ought to satisfy us, that our supply of wood is not inexhaustible; and, if it does not, let us look at England, at France, at every maritime nation on the globe, and they will warn us of the necessity of economizing the means which Heaven has bestowed upon us, to extend our commerce, and add to our national glory.

The destruction of our forests is beyond the conception of those who have not witnessed it; to obtain the frames of nine line of battle ships, and twelve frigates—hundreds of thousands, nay, millions of cubic feet of live oak, *suitable for every description of vessel*, have been left to rot on the ground where it was cut. To obtain a single timber, it is not uncommon to cut down a whole tree, and the balance is left to the slow, but sure, operations of time.—The Caribs were called barbarous, for destroying the cabbage tree to obtain the fruit; but with how little justice can *we* reproach them!!! *"They manage these things better in France."* I have adverted more than once to the practice in that country, with regard to felling timber, to the system adopted there at an early period, to preserve their forests from destruction; and, by the force of which, France is at this day enabled to supply all the wants of her navy and inhabitants, without any resort to foreign timber. It would be impracticable, perhaps, to adopt a similar system among us, but as it may aid us in forming an idea of the estimation in which timber is held where it is scarce, I beg leave to go more into detail respecting it, and presume that the long continued practice of that enlightened nation, will be of more value than any observations that could be made from my own experience.

Your inquiry was as to the "proper season of cutting timber, with views to its durability, under exposures incidental to farming purposes." I have endeavoured to confine my answers, as much as possible, to the specific subject of your inquiry, but have occasionally and unavoidably digressed—for this you will pardon me—the means of preserving was a concomitant. Your *object* is undoubtedly an economical use of timber, I shall take, therefore, the liberty of showing, not only the *time* of cutting, but the *manner* of doing it in France, to produce this economy.

I have heard it said, that when you have a mind to cut down a tree, you should visit it three times, and at each time inquire of yourself whether you can do without it, and that after you have made up your answer, you should leave the tree standing. Whether the rule is a good or bad one, I leave you to judge from what follows.

The manner of Collecting Timber in France, for Naval purposes.

The felling of trees, fixed on as suitable for maritime purposes, is not an operation to be performed with indifference. Agents for the navy are obliged to superintend it, and the guards of the forest are bound to prevent those losses, which are often occasioned by the awkwardness of workmen.

The contractors are bound, to fall the trees which are marked by the agents of the Navy, and to cut them under their inspection, into lengths and shapes, as required by the instructions which the agents had received.

The ordinances of France forbid the cutting of trees while they are in sap. *The time most usual for falling trees for the Navy, is the decrease of the moon.** And from the 1st of November to the 15th of March, although the ordinance of 1669, has fixed the time for felling timber, from the 1st of October, to the 15th of April. These periods were specified in the law, in order to give some latitude to the agents of the marine, and the guardians of the forests, as it might so happen that the inclemency of the weather might prevent their collecting the timber at the most proper time; and in such case there would be no impropriety in cutting as late as the 15th April, as the rise of the sap would till then be retarded.—They are, however, held strictly responsible, and under no circumstances is the cutting later than the 15th of April allowable. This practice is very favorable to the putting up of shoots from the roots, and consequently to the preservation of the forests. To abandon it would tend greatly to the injury of France, where timber is scarce and valuable; and, to evade its requisitions, would prove very prejudicial to her navy, as timber, cut at the time of vegetation, decays rapidly in consequence of the fermentation of the sap.

From the commencement of the season for cutting, the agents for the navy should be constantly with the cutters, directing them how to fall the trees to the greatest advantage, and particularly, so as to guard against splitting the stock, or breaking off the limbs, &c. &c.—and, wherever the limbs on a tree are of great value, and likely to be injured, when it is felled, they should require the contractor, to cut them from the standing tree, and lower them down so carefully, as to guard against damage.

Knees are obtained either from the branches or from the roots; but, as root knees are rarely obtained in France—and, when obtained, are seldom sound, the agents or guardians of the forests, must not allow a tree to be eradicated, unless they are certain that its roots will furnish a piece of first quality timber; nor even then, without first obtaining a written requisition from the naval constructors.

With respect to knees obtained from the branches, we ought so to manage, as that the tree shall fall on the flat side of the knee.

It is, above all, essential, that the greatest possible length should be preserved to the body of the tree; and, as the lower part of the trunk, if it is sound, affords the most compact and perfect wood, it is advantageous to root up trees, particularly if the root will afford a knee—But, trees cannot be rooted up in the Royal forests of France, without express authority—and this is only to be obtained when

* *"Le temps le plus en usage pour l'abattage des bois de marine est celui du decroissement de la Lune."*

it is expected that by thinning the forest, the remaining trees would be improved.

If the tree is felled with an axe, it should only be cut on two sides, and as near the earth as possible.

In all cases, the tree should be made to fall on its convex side.

When the government has ordered an extra cutting of timber, as soon as the marking of all the trees which are to be cut is completed, the agents and foresters divide the workmen into companies, according to the extent of the forest, and the number of trees to be felled--each of these companies has a chief undertaker, who is paid according to the established custom of the province—The naval constructors then give to the superintending officers the necessary directions, for the faithful execution of which they are held responsible.

Cutting up of the Trees.

As when the trees are cut down, the agents of the Navy mark where the branches are to be cut from the trunk in a manner so apparent, that the workmen cannot be mistaken. Such of the branches as can be converted into knees, or other ship timber, are carefully preserved ; and the trunk of the tree is separated from the top agreeably to the length which the instructions call for.

It will beperceived by the foregoing details that every tree is considered in France, an object of National interest; and that the utmost formality is observed to guard against a waste of timber. Let us then take a lesson from her. Let us look forward to the day, when in this country, as now in France, the great value will be felt of that material, without which, Naval operations at least must cease ; and, if the present wasteful practices continue, that day is *not far distant*. East Florida furnished much of the live oak for the ships now building, *and the possession of that Province for the timber it was capable of furnishing, was considered a very desirable object ; altho' its forests are very far from being inexhaustible.*

I think it was Taleyrand who said we had not within the United States, the live oak necessary for even a very limited Navy—*and he was not far wrong.*

I seem to have got from farming to Naval affairs, and my apology must be found in this consideration : the period most proper for cutting timber for the Navy with regard to its durability, is also the most proper for the farmer's purposes, as timber cannot change its properties ; employ it as we may, it is still timber, and may contain within it or be free from the seeds of decay, independently of the use which we may make of it. *Moisture hastens its destruction, dryness is favourable to its durability.*

With sentiments of respect and esteem,

Your obedient servant,

D. PORTER.

J. S. SKINNER, Esq.

P. S. If I can be assured that I have been the cause of saving one tree from unnecessary destruction, I shall deem myself amply compensated for the time I have devoted to the subject. D. P.

GREAT VALUE OF, AND MODE OF USING MARLE.

FROM THE SARATOGA SENTINEL, Oct. 1819.

To ELISHA POWELL Esq *President of the Saratoga Agricultural Society.*

SIR—That the public may more readily appreciate the object of the following observations, I have taken the liberty of addressing them to you, and from a knowledge of the interest which you take in the advancement of useful knowledge generally, as well as in promoting the welfare of the Society over which you preside, I flatter myself that the effort will meet with *your* own approbation and support.

The subject of manures has engaged the attention of the practical farmer from the earliest periods of civilized life, and a knowledge of the various and important modes of fertilizing land constitutes, in a great measure, the ART of useful and profitable husbandry.

Hitherto, the *Barnyards* and the *Plasterbeds* have furnished almost the only fertilizing properties which the Farmers in this country have had recourse to, and their beneficial effects, when judiciously applied, are too well known to require any comments ; the *deficiency*, however, in the quantity produced by the former, furnishes an insurmountable obstacle to its extensive usefulness, and the *expense* and *trouble* consequent to procuring a sufficient quantity from the latter, must forever operate against the general use of it as a manure, and will always deprive the poorer class of farmers from participating in the profits resulting from its use.

MARL is a substance that experience has long since found to be a useful manure, and as it abounds in some parts of this country, may, without doubt, become a valuable substitute for gypsum. It is to this subject I beg leave, through you, to call the attention of our farmers.

Marl is commonly divided by geologists, into two kinds, *earthy* and *indurated*, these are often found alternating in the same bed and frequently passing into each other. Earthy Marl is of a loose friable consistence, strongly resembling clay in its external appearance. Indurated marl is of a more compact structure, it is, however seldom so hard that it cannot be scratched with the nail and always may be cut with a knife, its colour, like the earthy, commonly resembles clay, but both are sometimes of a reddish tinge and they are often shaded with brown, black or yellow.

The essential composition is *carbonate of lime* and *clay* or *argillaceous earth*, hence it is usually termed, as one or the other predominates, *calcareous* or *argillaceous* marl. Sand is sometimes found combined with the other articles in different proportions, and small glimmering specks of *mica* are frequently observed disseminated throughout the mass.

Marl is readily distinguished from *clay*, which is the only substance it is likely to be mistaken for, by its *effervescing* with acids ; if any of the mineral acids, or even strong vinegar, be dropped upon the surface of the marl, it will produce an immediate effervescence, or in other words the drop will assume the appearance of boiling ; this will not be the case when it is dropped upon clay. A more simple mode may be adopted when no acid is at hand ; preserve a lump of the earth to be examined, the size of an ounce ball and when it is well dried, drop it into a tumbler of clear water, if it be marl it will immediately crumble into a fine soft paste in the bottom of the glass, giving off innumerable fine air-bubbles which rise to the surface in rapid succession, but if it be clay, it will retain its shape without being materially changed by the water.

Marl is the product of both secondary and alluvial formations, hence it is sometimes found in extensive beds alternating with compact limestone or gypsum, extending to a great depth, interrupted only by thin layers of sand, coarse gravel or clay, and not unfrequently, containing great quantities of the remains of both land and aquatic animals. Earthy marl is frequently found immediately beneath the soil.

In this country it is highly probable that marl may be found in great abundance, along the whole extent of the limestone range, which passes from Glenn's falls in a southwest direction and crosses the Mohawk some miles above Shenectady. At Saratoga Springs it is observed to extend from the valley in which the mineral waters are situated to the borders of Saratoga lake, along the north and northwest banks of which it discovers itself in deep and extensive beds from ten to twenty feet beneath the sandy loam which forms the surface. On the plains which lay in the direction of the lake, it is found in the bottom of some wells from thirty to forty feet deep, but along the course of streams and in some vallies, it approaches nearly to the surface. In the valley at the Springs it is covered about eight feet by a *fibrous peat.*

Specimens of the marl, obtained from different places in this tract, afford the highest proof of the richness of its qualities, yielding from thirty to sixty per cent. of the *carbonate of lime*, the substance in which its principal fertilizing quality is supposed to reside. Specimens have likewise been examined from Moreau, Wilton, Ballston-spa and several other places which promise to be equally fertile.

In England the application of marl, as a manure, has been for a long time in high estimation, and some large tracts of land which were formerly considered too barren for even sheep walks, have been converted into farms of the first quality by merely transporting a quantity of the marl, which lay a considerable depth beneath, to the surface ; and in the state of New Jersey, it is frequently transported more than twenty miles over land to be applied to the most light sandy soils, where its effects fully justify the expense and trouble of transportation.

The method adopted for the application of this manure is extremely simple —It should be placed upon the land late in the fall or during the forepart of winter, and left in small heaps to be pulverised by the frosts and rains of the season,and early in the spring spread equally over the surface. When intended as a top dressing for clover, this proces is all that is required, and, if it be applied in sufficient quantity, its good effects will be as perceptible as that produced from the most judicious application of gypsum. When the field is intended for summer tillage, it should be ploughed sufficiently often to combine the marl intimately with the soil, after which it may be either planted with Indian corn (in which case it should be seeded in the spring following) or sowed with summer grain and seeded with clover at the same time, with a view to procure a coat of vegetable manure for the succeeding year, when the land is to be fallowed and sowed with winter grain. In this way a succession of luxuriant crops may be obtained without impoverishing the land, but, on the contrary, greatly adding to its fertility and that too at a much less expense than in the mode usually pursued, with gypsum.

Marl, when applied to hard clayey lands, produces but little if any effect ; but it is on loose sandy soils where its greatest efforts are exerted ; hence it is evident that the quantity, necessary to be applied to a given space, depends in a great measure on the soil itself. If the soil be of a sandy texture containing clay and vegetable mould, a much less quantity is necessary than on those lands which contain a greater proportion of sand. In England, where the use of marl is probably better understood than in any other country, it has been found necessary, on the most light sandy lands, to apply it in the proportion of one hundred loads to the acre, but the sandy lands in this country generally contain a proportion of clay and some vegetable remains ; it is therefore probable that half that quantity, or even less, would be amply sufficient here, although on lands that have been impoverished by a long course of stinted tillage the quantity would require to be somewhat increased.

From what has been stated, it is highly probable that the whole of those lands usually termed *pine plains* or *pine barrens* in this county are generally, if not wholly, underlaid with the substance in question, at a greater or less depth, and it is possible that the owners may, with but little trouble, find a supply on their own farms and immediately beneath the very soils which require its application. It is therefore of importance that every parcel of earth, which bears any resemblance to marl, should be examined with care, as the discovery would be invaluable.

I remain, with sentiments of respect and esteem, your's &c.

J. H. STEEL.

Saratoga Springs, Oct. 14, 1819.

The HORSE RAKE useful in the Harvest-field ; the HAND-HOE unnecessary in the Corn-field ; the PLOUGH may be superseded in Arable land—Remarks by Tuscarora, censured.

FOR THE AMERICAN FARMER.

Gloucester County, Va., July 1st, 1821.

DEAR SIR—I have this year, for the first time, employed the horse-rake in my grain field, and esteem it an ingenious and most valuable

agricultural implement. So pleased was I with the performance of the rake, badly constructed as it was, that I applied it to the harvesting of my whole crop of barley and wheat, causing the horse to walk fearlessly over the cut down grain. I never harvested my grain with so much expedition, so small a loss, and such little expense, as I have done this year; and for this expedition, this small loss, and this little expense, I am exclusively indebted to the horse rake. By passing a roller over the harrowed grain at *seeding time*, I have no doubt but the horse-rake, properly constructed, will be enabled to take up in harvest every head of grain, whether long or short, that falls upon the ground from the action of the scythe; and thus supersede entirely the employment of *hired rakers*. It is very seldom indeed, that we are able, or think it adviseable to cradle our winter barley; as from the yielding nature of the stalk and the gravity of the head, it lodges so much and becomes so completely entangled, that the introduction of the cradle would be attended with no inconsiderable loss of grain. But so delighted am I with the horse-rake, that I now consider cradles, mounted upon scythes, almost as a needless incumbrance.

Of the wheat which I have this year cut down with the *naked scythe*, and collected with the horse rake, I do not believe scarcely a dozen heads were lost. It was harvested in the state recommended by Mr. Brush, in the quotation as given in the American Farmer, vol. 2, page 169.

It is my intention another year, if Providence spare my life and health, to set apart a few acres for the purpose of ascertaining whether we may not entirely dispense with the use of hand-hoes in the cultivation of Indian corn, from the planting of the grain to the harvesting of the crop. I entertain little doubt as to the successful application of this theoretical idea. The advantages will be almost inappreciable

Nor am I less persuaded as to the truth of the doctrine advanced by Maj. Gen. Beatson, that the plough may be altogether superseded in the cultivation of our arable lands. Your correspondent, Mr. Buckner, of Fauquier, in his valuable numbers on rural economy, published in the American Farmer, when speaking of Indian corn, has advanced some ideas relative to the cultivation of land, without having seen, I believe, the publication of Beatson, which are similar to those great and important truths, which the latter wishes to inculcate upon the public mind in England.

And I am sorry that a gentleman from this county, has assailed Mr. Buckner in a style rather indicating a wish to gratify a peevish and splenetic fancy, than a desire to give a proper and candid construction to Mr. Buckner's thoughts upon the subject; and I take this opportunity, which you may use at discretion, of *solemnly disavowing* an attack improperly attributed to me by several in this county; an attack, permit me to say, as perfectly at war with my own feelings and reflections upon this topic, as with the conclusions of a just and liberal criticism: It is nothing more than a bantling, begotten in an unguarded hour, when privacy and opportunity favoured; the ill-starred offspring of a heedless moment, which the *real father*, as a gentleman and a scholar, was ashamed to acknowledge!

I am with sentiments of the
highest respect, your's, &c.
S. S. GRIFFIN, D. M.

TOBACCO,

May be cured bright and safely by the use of fire, in flues of cheap and easy construction.

Procured in answer to the enquiry made by Dr. Muse, in No. 20 Vol. 3.

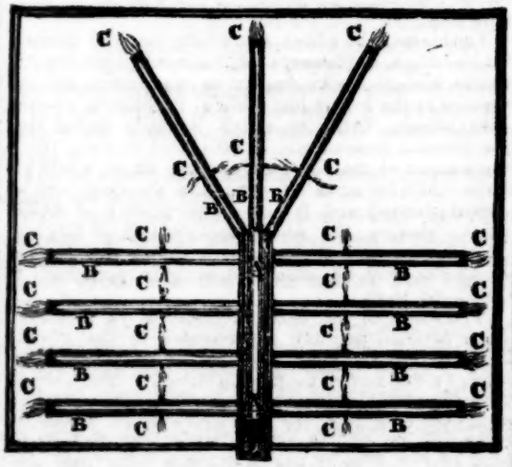
BALTIMORE COUNTY,
GRANITE HILL, September 3, 1821.

SIR:

Your letter of the 18th of August, requesting me to give you a description of the flues built in my father's tobacco house, did not reach me until to-day, or it should have been sooner answered; but I will now attempt to describe them in a manner that I hope will be readily understood and may prove to be extensively useful: for the tobacco cured last year by my father in a house heated through flues, was not only cured in perfect safety, but of an excellent colour.

The advantages of heating tobacco houses in this manner, will be so evident to all who try it, and the expense of the experiment is so trifling, that it is not worth while to occupy your paper with any arguments in favor of the plan.

Floor of the TOBACCO HOUSE, and bird's eye view of the FLUES.



AA is the main flue, commencing outside of the house and running inside half way across the earthen floor; it is 2½ feet wide, and paved at the bottom; it is 2½ feet high, walled on each side, and then arched over; the materials used, were brick and mortar, but soap stone would do as well, if not better, when it can be conveniently obtained. On its sides, and at its end, the small flues BBB, &c. are connected to it—these are open at the ends, and have orifices at CC in each side and end; they are five inches clear of the walls, were formed of bricks, and covered, with a good coat of mortar. The draft of air in the flues can be regulated by the iron door D at the mouth of the main flue. The flues are so far below the level of the floor that nothing is seen of them except the arch of the main one, and the covering bricks of the small flues.

These flues are similar to those constructed for and used by Mr. Painter of Montgomery County, Maryland, and were made, because we understood that his had answered every desirable purpose. The whole labour of constructing ours was performed for ten dollars, and the work might be done by any attentive man.

I remain, very respectfully, your's
CHARLES S. MATTHEWS.
September 3, 1821.

MOWING MACHINE.

A Mr. Bailey, of East Marlborough, Penn. has invented a mowing machine, which has been put in operation in the presence of a number of spectators, and cut grass very neatly, at the rate of one acre in 36 minutes. The form of the scythe is circular, about five and a half inches in diameter, and put in motion by wheels, and the whole moved by one or two horses, harnessed, as in a cart.

[*National Intelligencer.*

INTERNAL IMPROVEMENTS.

IT is proposed in South Carolina, to construct a rail-way between Augusta and Charleston, 140 miles in length, the expense of which is estimated at $500,000. It is calculated that 100,000 bags of cotton, and other produce equal to 50,000 more, pass down this route; and that about the same amount of freight is brought back, the tolls on which, besides keeping the road in repair, would give a profit of 20 per cent. on the capital invested.

THE FARMER.

BALTIMORE, FRIDAY, SEPT. 14, 1821.

PRICES CURRENT.

Flour from the wagons, $5 12½—Whiskey from do. 27 cts. exclusive of bbl.—Wheat, white, $1 05 to 1 10—Red, do. $1 a $1 03—Corn 50 a 51—Oats, 24—Rye, 40—Hay, $12 a $14—Live Cattle, $5 a 6 50—Codfish, per quintal, wholesale, $3, retail 3 50 a $4—N. England Beans per bushel $1 12½—do. Peas, 75 cts—Plaster in stone $6 per ton—do, ground, $1 35 per barrel, 33 cts. per bushel, $8 per ton—New-Orleans sugar, $9 to $12 50—Muscovado, do. 9 a $12—American White Lead, $12 50—Ground do. 13 a 14—Linseed Oil, 75 cents—Feathers, 40 a 45 cents—Shad, new, $6—Herrings, $2 a $2 25, declining—Fine Salt, 55 cents per bushel—Ground Alum do. 55 a 60—St Ubes, 60—Cadiz, 50 a 55—Turk's Island, 75—Beef, 8 to 10 cts—Hams, 10 a 12 cents—Middlings, 10 cents—Butter, 25 cents—Peas, 50 cents pr bushel—Eggs, 12½ cts—Cheese, 8 a 10 cts per pound—Tar $2—Turpentine, soft, 2 Cargo prices—2 ms. credit.—Hard, 1 50 to 1 62½—
Pitch 2 a 2 25—Rosin, common, $1 37½ a 1 50—Varnish, 25 cents—Spirits Turpentine, 33 cents per gal.

We have heard of no sales of Virginia and Maryland Tobacco since our last report.

A SITUATION

Is wanted by a middle aged English Farmer, who has lived upon and managed an extensive estate in Baltimore county during the two last years. He is a married man, and his wife during that period had charge of a Dairy of ten well fed cows, from which she generally made 50 lbs. of excellent butter per week. He would prefer to obtain employment as an overseer upon a large and fertile farm in a healthy district, and from his perfect knowledge of English Agricultural practices, as well as his experience in this country, both as it regards the improvement of land, the cultivation of crops and care of stock, particularly Neat cattle and sheep, he feels a just confidence that his services might be very useful and satisfactory to many persons. A line addsessed to me at Baltimore, will be promptly attended to, and reference may be made to the editor of the American Farmer, who will satisfactorily answer every enquiry as to character, and qualifications.

J. KEMP.